

Department: *Economia e Finanza – Financial Economics*
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**DUAL TRACK SELL-OUT:
SIGNALING THROUGH IPO AND
UNDERPRICING.**

SUMMARY

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Summary.

Most financial literature studied IPOs as instruments of fund raising, but recent empirical research started focusing on other rationales. One branch of these studies analyzed IPOs as a step that private owners undertake before selling their business, completing the so called *dual track sell-out*. This procedure allows sellers to enjoy the acquisition benefits deriving from the public status, such as better visibility and higher acquisition probabilities and prices. These advantages stem from the fact that in the public market larger amounts of information are disclosed to potential bidders, which may be more confident about targets' valuation and attach lower discount rates to their cash flows.

Soumendra and Jindra (2012) found that on a sample of 6076 IPOs ranging from 1980 to 2006, 15% of the newly listed companies became acquisition targets, but the relevance of this sale procedure is discussed also in many other empirical studies. In spite of its direct advantages, the *dual track sell-out* is not undertaken by all companies alike. M&A transactions in which the target is a newly listed company are often characterized by remarkable uncertainty. Dual tracking occurs especially under certain circumstances: when the target value is mainly driven by intangible assets and unique resources; if the industry in which the target operates is geographically scattered; when the market of competence of the acquirer is distant from the target's one; when acquirer's business is different from the one in which the target operates.

The aim of this work is to understand whether asymmetric information plays a significant role in the *dual track sell-out* suggesting that, on top of the direct advantages stemming from turning targets from private to public, the procedure can also be used as

a mean of signaling. Combining both recent empirical evidence and theory, the IPO process is reckoned to be a signal itself, which can be enforced by excessive *underpricing* of the issuance proceeds. *Underpricing* as a signal was already theorized by Allen and Faulhaber (1988) and Welch (1989), who suggested that the observation of *underpriced* issues is due to the presence of asymmetric information between firms and investors. In the model presented, going public together with *underpricing* is used by targets in order to differentiate their quality under the eyes of a potential acquirer.

The model is constructed as follows: private companies are framed in a market characterized by imperfect information where there is a potential buyer which shows interest into buying the firms with a certain probability. The quality of the targets follows a continuous distribution. Firm's quality influences several model parameters as the price the potential buyer would bid, the stand-alone value of the target and the impact of *underpricing* on target's payoff. Sellers can decide either to stay private or to go public at a fixed cost. If firms choose to undertake the IPO, they can decide whether and how much to *underprice* the issue at a proportional cost. The most important environmental difference between the public and the private market framework considered in the model is that targets are going to be acquired more likely when public, because of their better visibility. Model outcomes depend on buyer's beliefs and on actions' costs and benefits.

The public market game played by targets is equal to Spence's (1973) education model. As aforementioned, the difference in quality is reflected in the ability to recoup unproductive losses from *underpricing* and in the prices the buyer is willing to pay for the several types. Firms with better quality suffer a smaller impact from *underpricing* and have larger acquisition values. In spite of the advantages stemming from the public

status, going public is costly for targets. Defining c the fixed cost that companies must sustain if they want to turn their status from private to public, different equilibria can be found at different cost levels. In particular, calling x and y the types with respectively worst and best quality, we can find two cost thresholds that divide equilibria in three main sets. Define c_x and c_y these two points, with $c_x < c_y$: their values will depend on model parameters, such as acquisition prices, acquisition probabilities and stand-alone payoffs. The two cost levels defined are respectively the ones that make worst and best type indifferent between staying private and going public, such that if $c > c_x$ the worst type is better off by remaining private. The same reasoning holds also for y and for all the types lying between worst and best type.

We can affirm that for $c \leq c_x$ the following equilibrium holds: *all types go public; every type is paid its true value; larger underpricing is observed for targets with better quality; buyer beliefs are such that targets with higher quality underprice more; the price offered in the private market corresponds to the one that would have been paid to the worst type.* In the public market the Spence game is played, hence any type is able to differentiate. In the private market the worst type price is offered because going public is a signal itself and even the worst type is better off doing the IPO rather than staying private.

For $c_x \leq c \leq c_y$ the following equilibrium holds: *a fraction ρ of types, which negatively depends on c , goes public; only public types are paid their true value; inside the public market, larger underpricing is observed in targets with better quality; every underpricing level is lower the larger the portion ρ ; buyer beliefs are such that targets with higher quality underprice more; the price offered in the private market updates*

through Bayes rule and positively depends on c and, therefore, on $1 - \rho$. Since better types correspond to larger fixed cost thresholds, the larger c the smaller the fraction of targets dual tracking. Furthermore, a smaller number of firms in the public market decreases the necessity to differentiate and every company *underprices* less. In the private market, instead, targets have no way to differentiate themselves. The unique price offered in this market reflects the quality of the targets that find dual tracking too costly to be sustained. Hence, by Bayes rule, the buyer updates its beliefs and offers higher prices at larger cost levels, since the quality of the private firms is better the larger the c .

At $c > c_y$ the private market equilibrium holds: *no type goes public; nobody is paid its true value; buyer beliefs are such that all companies are in the private market; the price offered in the private market is the pooling price*. Dual tracking is too costly for every target and no company goes public. The equilibrium reflects a situation equal to the one in which dual tracking was not available and where asymmetric information could not be solved.

Given the fact that the model outcome depends on c thresholds, two main analyses are conducted. First of all, the model attempts to capture why targets using dual tracking procedures are usually affected by asymmetric information. Hence, how would thresholds be different if all agents were perfectly informed both in the private and in the public market? Secondly, empirical findings show that *underpricing* among targets is usually larger under high acquisition activity periods. Therefore, how would a M&A wave period affect model outcomes?

The answer to the first question is developed as follows: the model is replicated as no information asymmetries were present. No *underpricing* would be observed and, for any type, the price offered in the private market would be the true one. Every c threshold is computed again and it is found that, for any quality type, cost levels at which targets are indifferent between going public and remaining private are lower under perfect rather than under imperfect information. Since the presence of lower thresholds means that at larger fixed costs a smaller fraction of companies goes public, at any c more firms dual track if we are in a world of asymmetric information, as empirical evidence suggests.

In order to answer to the second question, we must understand how model parameters would change under high acquisition activity periods. M&A waves are usually triggered either by technological shocks or by better investment opportunities, suggesting an increase in the prices paid by acquirers. It is shown that larger acquisition prices cause any c threshold to be larger. The previous reasoning still holds: larger thresholds imply that more targets dual track at any fixed cost. The model shows that larger fractions of firms dual tracking cause all *underpricing* levels to be higher and therefore, consistently with the empirical findings, under high acquisition activity periods every target *underprices* more.

The main goal of this work was to understand whether dual tracking could be effectively considered a valuable signal and if excessive *underpricing* is justifiable as a complementary instrument. Market and firm related characteristics influence the benefits achievable through the dual tracking procedure. Although there exist direct advantages attainable by changing target status from private to public, IPO itself plus issuance *underpricing* are shown to be also responses to asymmetric information,

causing companies framed within uncertain environments to be more prone to dual track. The validity of this instrument as a signal increases the larger the costs to be sustained. Larger levels of *underpricing* arise only if the costs of going public are not sufficient to prevent worse types from dual tracking. In other words the revelation effectiveness of the IPO procedure depends on its feasibility and *underpricing* can be considered as a signal reinforcement.

Dual tracking decision does not rely only on public status benefits. A self-selection process allows those actors who are framed in uncertain environments to benefit also from quality revelation. Gains belong to both better targets, since uncertainty favors poor companies and damage good ones, and buyers who become more confident of their valuations. Any company choice should be analyzed under several lights in order to capture its assessment drivers and very often, for decisions as largely analyzed as undertaking Initial Public Offerings, any interested party can easily oversee key elements that would totally change the meaning behind those actions.

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